

AMENDMENTS TO THE DRAWINGS

Please replace informal Figure 12B, submitted by the Amendment of September 25, 2005, with the informal Replacement Sheet for Figure 12B which is appended hereto.

REMARKS

Summary of the Amendment

Upon entry of the present Amendment, informal Figure 12B will have been replaced with a Replacement Sheet for Figure 12B.

Furthermore, Claims 1, 3, 9, 17, 23, 29, 37, 38, 40-48 and 50-52 will have been amended, and Claims 2, 13, 15, 18, 20, 21, 25-27, 32, 34-36 and 39 will have been cancelled without prejudice or disclaimer. Accordingly, Claims 1, 3, 4, 6-12, 14, 16, 17, 19, 22-24, 28-31, 33, 37, 38 and 40-52 are currently pending in the present application.

More particularly, by this Amendment, each of independent Claims 1, 9, 17, 23 and 29 of the present application has been amended to describe the feature of one of the leads of each adjacent pair as including a pedestal between the inner end and recessed surface thereof. In Claim 1 as amended, the pedestal is described as being included on each of the leads of the second subset, the recess of each such lead being disposed in the second (lower) surface thereof. In each of amended Claims 9, 17, 23 and 29, one lead of each adjacent pair is described as including the pedestal between the inner end and recessed surface thereof, such pedestal projecting downwardly away from the first (upper) surface of such lead.

Applicant respectfully submits that the changes made to each of independent Claims 1, 9, 17, 23 and 29 by the present Amendment are consistent with the showing in Figure 4A of the present application which depicts each of the leads 202 of the second subset as including a pedestal 400 which projects downwardly away from the upper surface thereof toward the die pad 212. The functionality of these downwardly directed pedestals 400 is described with particularity in Paragraph [0051] of the originally filed specification which describes such pedestals 400 as providing mechanical support to the inner end segments 202a of the leads 200 during a wire bonding process. The need for such mechanical support is apparent from a review of Figure 4A, considering that those portions of the inner end segments 202a of the leads 202 which do not include the pedestals 400 reside on a common plane which is disposed well above the common plane upon which the inner end segments 200a of the leads 200 reside. The changes made to the remaining claims of the present application by this Amendment are directed primarily to making the language thereof consistent to that of the underlying amended independent claim.

By the present Amendment and Remarks, Applicant submits that the rejections have been overcome, and respectfully requests reconsideration of the outstanding Office Action and allowance of the present application.

Summary of the Office Action

In the subject Office Action, the Amendments filed on August 24, 2004 and February 25, 2005 are objected to as purportedly introducing new matter into the disclosure. On the issue of patentability, Claims 17 and 20 are rejected under 35 U.S.C. §102(b) as being anticipated over the art of record, with the remaining pending claims being rejected under 35 U.S.C. §103(a) as being unpatentable over various combinations of the art of record.

Amendment to the Drawings

Applicant has submitted an informal Replacement Sheet directed to FIG. 12B to replace informal Figure 12B submitted by the Amendment of February 25, 2005. In the Replacement Sheet for FIG. 12B, the die pad 212 is depicted as being downset relative to the leads 200a, 200b with is completely consistent with the showing in original FIG. 5. The flip-chip style connection shown in FIG. 12B as depicted in the appended Replacement Sheet is fully supported by Paragraph [0066] of the specification as originally filed, and as modified by Applicant's prior Amendments of August 24, 2004 and February 25, 2005.

Applicant respectfully requests that the Examiner approve the amendment to the FIG. 12B as explained above, and to indicate such approval in this next Office Action before formal drawings are submitted.

Traversal of Objection under 35 U.S.C. §132

The Examiner has objected to the Amendments filed on August 24, 2004 and February 25, 2005 under 35 U.S.C. §132 as purportedly introducing new matter into the disclosure. In particular, the Examiner submits that the added material which is not supported by the original disclosure is the mounting of the chip 1402 on a "non-downset" die pad 212 as shown in Figure 12B.

As discussed above in the "Amendment to the Drawings" section, Applicant has submitted an informal Replacement Sheet directed to "FIG. 12B" to replace informal Figure

12B, which was submitted with the Amendment of February 25, 2005. As indicated above, Applicant submits that the depiction of the die pad 212 as being downset relative to the leads 200a, 200b in FIG. 12B as depicted in the appended Replacement Sheet is completely consistent with the showing in original FIG. 5, with the flip-chip style connection depicted in FIG. 12B being fully supported by Paragraph [0066] of the originally filed specification.

Accordingly, Applicant believes that the Section 132 objection has been overcome, and therefore respectfully requests the Examiner's indication of the same in the next Office Action

Traversal of Outstanding Rejections

In the subject Office Action, the Examiner appears to recognize that those references relied upon to support the rejections of independent Claims 1, 9, 17, 23 and 29 do not appear to explicitly disclose the pedestal feature now recited in such claims. In this regard, in an attempt to satisfy the pedestal feature recited in certain ones of the previously presented dependent claims of the present application, the Examiner relied upon the teachings of the Miyamoto reference (see Office Action, page 11, line 16 through page 12, line 14). As will be discussed in more detail below, Applicant respectfully submits that independent Claims 1, 9, 17, 23 and 29 as now amended are not rendered obvious by any combination of the cited prior art references.

The Miyamoto reference discloses a process in which the tip part of a gold wire 4 is formed in a sphere type, which is pressed against a semiconductor element 3 with a bonding tool 6 fixed to a horn 5. After bonding is performed by applying heat in ultrasonic waves, a loop is formed while the gold wire 4 is sent out from the bonding tool 6. When the bonding tool 6 is pressed against the tip of the inner lead 2, a point 7 is retained and the loop is formed, which point serves as a fulcrum when a part 2b at the tip of the inner lead 2, which has not yet been subjected to coining, forms the loop. After that, the horn 5 is lifted while grasping the gold wire 4, thereby tearing off the gold wire 4. The tip of the gold wire 4 is turned into a sphere type. Thereby, stable loop formation is enabled at the time of wire bonding without changing the conventional manufacturing method. The aforementioned feature is provided in the Miyamoto reference to eliminate the sag of a loop at the time of wire bonding process without changing the manufacturing method of an IC leadframe, by

starting a coining process for correcting material deformation at the time of punching, from the interior of an inner lead tip. Applicant respectfully submits that in order for the advantages/efficiencies to which the Miyamoto reference is directed to be realized, the point parts or projections 2b at the tip of each inner lead 2 must be directed upwardly in a manner shown in Figures 1-3 thereof.

As indicated above, in independent Claim 1 as amended, the pedestal is described as being included on each of the leads of the second subset, the recess of each such lead being disposed in the second (lower) surface thereof. In each of amended independent Claims 9, 17, 23 and 29, one lead of each adjacent pair is described as including the pedestal between the inner end and recessed surface thereof, such pedestal projecting downwardly away from the first (upper) surface of such lead. Indeed, as previously explained, in order for the pedestals now described in each of amended Claims 1, 9, 17, 23 and 29 to provide the intended mechanical support functionality, they must necessarily be downwardly directed in the manner shown in Figure 4A of the present application. While such downward projection of the pedestals is explicitly set forth in the amended language of independent Claims 9, 17, 23 and 29, it also occurs as a result of the relative orientations of the various features recited in independent Claim 1 as amended.

Applicant respectfully submits that based on the explicit teachings of the Miyamoto reference, one of ordinary skill in the art would clearly not be motivated to hypothetically modify each inner lead 2 such that the point parts or projections 2b are directed downwardly, rather than upwardly in the manner shown in Figures 1-3 thereof. In this regard, as also indicated above, modifying the inner leads 2 to cause the projections 2b to be directed downwardly would defeat the advantages/efficiencies to which the Miyamoto reference is directed. Thus, Applicant respectfully submits that it would only be with a disfavored hindsight consideration of the teachings of the Miyamoto reference that the same could be considered in combination with other cited prior art references of record to support an obviousness rejection of independent Claims 1, 9, 17, 23 and 29 as amended. Thus, Applicant respectfully submits that independent Claims 1, 9, 17, 23 and 29 as amended are now in condition for allowance, as are the remaining claims of the present application as being dependent upon respective allowable base claims.

Conclusion

On the basis of the foregoing, Applicant respectfully submits that the stated objections and grounds of rejection have been overcome, and that Claims 1, 3, 4, 6-12, 14, 16, 17, 19, 22-24, 28-31, 33, 37, 38 and 40-52 are now in condition for allowance. An early Notice of Allowance is therefore respectfully requested.

Furthermore, any amendments to the claims which have been made in this response and which have not been noted to overcome a rejection based on the prior art, should be considered to have been made for a purpose unrelated to patentability and no estoppel should be deemed to attach thereto.

If any additional fee is required, please charge Deposit Account Number 19-4330.

Respectfully submitted,

Date: 3/7/06

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